

A NON-UNIDIRECTIONAL MOVEMENT IN THE VERBAL SYSTEM?

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1. Introduction

1.1. Path model

The theory of paths —as posited by Bybee, Perkins & Pagliuca (1994) and Dahl (2000b)— provides scholars with a model of the grammatical growth of verbal formations. It shows how grams belonging to a similar type emerge from lexical, semantically transparent and possibly iconic locutions, how they develop into prototypical categories of taxis, aspect, tense or mood, and finally how they decay, disappear or are reused for new grammatical purposes. In other words, clines aim at codifying an *exemplary* grammatical life of components of the verbal system. For instance, the trajectory that depicts the lifecycle of entities “born as” resultative proper grams predicts that such formations typically evolve into more central taxis (e.g. perfect), aspectual (e.g. perfective) and temporal (e.g. past tense) expressions. At the end of their grammatical existence, this group of formations is usually limited to a literary narrative remote past tense.¹

1.2. Unidirectionality and universality

It is important to note that paths are frequently understood both as universal (Bybee, Perkins & Pagliuca 1994: 104) and unidirectional (Dahl 2000a: 11-12). This, in turn, gives an impression that the entire approach is teleological (goal-oriented), hodological (end-oriented) or “deterministic in [...] philosophy” (Drinka 1997: 118). The universality and unidirectionality —and thus the determinism— of the clines need however to be clarified.

The universality of trajectories (i.e. the fact that they are intended to operate in all languages and to be valid in all geographical and temporal locations) as well as their unidirectionality (i.e. the claim whereby the paths are not reversible and thus that the order of stages located on a cline is invariable) refer to the abstract model and not to empirical cases (Dahl 2000a: 12 and Traugott 2001: 1, 5).

¹ For a more detailed discussion of the grammatical life of original resultative constructions, see sections 2.2 and 3.1, below.

Paths have been extrapolated from extensive empirical research and verified by an immense sample of languages. This experimental foundation and the existence of a few irregular or problematic cases (cf. Drinka 1997) have led some scholars to understand clines as “almost universal” tendencies: although empirically confirmed, trajectories may be violated.² In that manner, the universality and unidirectionality are nearly or statistically true, accounting for a huge majority of cases but not for all of them (cf. Newmeyer 1998: 275 and Traugott 2001: 3).

Since paths correspond to inductive generalizations derived from available evidence, they are indubitably hypotheses about robust *tendencies* (Bybee, Perking & Pagliuca 1994: 104-105, Traugott 2001: 1). As any theory constructed upon empirical data by means of the inductive reasoning, the path model is in fact a belief that the evidence observed thus far and laws derived from it will hold for all languages and for all historical periods (Popper 1968 and 1972 and Wagensberg 2007). But this is nothing more than *a belief!* The induction by repeating or enumerating examples can never lead to an absolute universal truth. A hypothesis may have an overwhelming number of examples in its favor but we still do not know whether it is a universal law – verification is always open-ended (Popkin 1999: 647). Generally speaking, any inductive overgeneralization fails to be “logically” sustained because, when proposing a law, an immense portion of reality must always be ignored. In our case, how many languages (that exist now, are already extinct and will appear in the future) need to be verified yet in order to posit an absolutely universal rule? *Per vim*, the inductive approach will never allow us to grasp all possible linguistic cases. Even if we collected all the data currently available, the infinite amount of evidence (i.e. evidence available in the past but lost for today, as well as evidence that will be available in the future) would be left aside. This past or future evidence —currently inaccessible— could easily refute our law. Consequently, we take our generalization for laws, being aware that they are “hypothetical universals”. In doing so, the path model does not differ from any empirical theory and thus its statements are as universal as biological, chemical or physical laws are. Like biology, chemistry and physics, the path theory interprets a limited amount of cases as representative enough for the universe or a delimited part of it and predicts that *all* entities of a given type should behave in such and such manner.

It must also be noted that clines are abstract idealizations, a type of higher level rules. They operate at a higher level of abstraction (Traugott 2001: 5), in a so-called ideal world where various “noises” have been ignored. It is at this level where they are both universal and unidirectional (Dahl 2000: 12). A given evolutionary pattern —derived inductively from empirical evidence— is *assumed* to be universal (cf. inductive generalization, above). But this universality refers to an abstracted model in which the process in question has been simplified enough so that it could be theoretically and scientifically manageable, and represented as isolated from the remaining parts of the system. Idealizing or even falsifying the real state of affairs, we treat a given law as an independent formula. Contrary to

² This infringement, however, is highly infrequent (cf. Newmeyer 1998).

the realistic situation, no interactions with the adjacent world are usually envisaged. But this is the only way any empirical science can go. Propositions of a scientific model not only overgeneralize but also profoundly idealize the universe – they never portray the world as it is (Auyung 1998). They state how a given phenomenon would be if it was perceived independently, in isolation or in ideal conditions – any friction, disturbing forces or accidents are simply treated as if they did not exist.

Consequently, the concepts of universality and unidirectionality do not imply that all concrete grammatical construction will always develop in the same manner. They mean that language evolution is driven by a number of theoretical principles. These abstract —both overgeneralized and idealized— truths are universally valid and, as any scientific theories (Luisi 2010: 26), deterministic.

1.3. Problem

Once identified as universal, all such scientific propositions are being constantly verified and, in particular, tested for a possible falsification. Although we take them for laws, we immediately wish to demonstrate that in certain aspects they may be modified, improved or even entirely remodeled. We know that our theory and thus our paths are provisional in their conclusions because they are —and must be— falsifiable (Luisi 2010: 28). As a result, we constantly test universal clines (which simply amount to the best available hypothesis we have) with concrete empirical evolutionary cases. We are particularly interested in supposedly irregular cases that have been reported to violate the rule.

If we encounter a supposed counterexample to a posited cline, quite commonly we can demonstrate that such a superficially reversal movement corresponds, in fact, to a combination of interacting and competing prototypical path-laws. Thus, the irreversibility or abnormality is only an impression – all underlying processes are fully regular and consistent with posited clines. In other words, there is no necessity to postulate opposite developments. What looks like heading towards a contrary direction is an aggregate of more basic and standard individual forces, viz. paths (Dahl 2000a: 12 and Andrason 2010a). In certain instances, however, reported irregular examples indeed seem to contradict a given cline. This is the case of the development of the Proto-Indi-European (PIE) Aorist in the Indo-Aryan (IA) branch (in Vedic, Brāhmaṇas and Classical/Late Sanskrit). According to Drinka (1997), the evolution of this gram constitutes a counterexample to the theory of universal paths, because it contravenes a unidirectional model of grammatical life of resultative formation, viz. the anterior cline.

In the present paper, we will demonstrate that the universality and unidirectionality of paths may be preserved —and thus Drinka’s case dismissed— if we re-interpret the model of clines as a representation of the *acquisition of new senses* and not as a theorized replica of the *evolution of grammatical categories*.

We will start our study by explaining the “running” of the anterior cline (the path that is supposedly violated by the growth of the IA Aorist) in the standard model of universal trajectories (2.1) showing its shortcomings and inaccuracies (2.2). Next, we will propose a new understanding of the anterior trajectory where

stages represent senses and not grammatical categories (3.1). This view of the anterior track will enable us to employ the cline in order to represent a gram's polysemy – its semantic potential, a *state* (3.2). After that, a more realistic model of the development of grams (i.e. as an evolution of states) will be posited (3.2). Equipped with these new conceptual tools, we will demonstrate that the Aorist suffered an entirely regular modification during its history from Proto-Indo-European to Classical Late Sanskrit: it acquired senses respecting the order established by the anterior cline, thus confirming the ideas of universality and unidirectionality of *re-interpreted* paths.

2. Standard model

2.1. Standard model of the anterior path

Derived from extensive typological studies, the anterior path is an evolutionary scenario that provides a model of grammatical life of original resultative proper grams (e.g. Nedjalkov & Jaxontov 1988: 3-63; Bybee, Perkins & Pagliuca 1994: 51-105, Dahl 2000: 14-17 and Nedjalkov 2001: 928-940).³ More specifically, this cline determines that resultative proper grams regularly become present perfects (anterior)⁴ which subsequently develop into perfective and simple past tenses. Bybee, Perkins & Pagliuca (1994) additionally split the present perfect stage into 'young' and 'old' anterior. The former category is a prototypical present perfect while the latter offers certain uses that match more advanced phases of the path, being admissible in past functions. The anterior cline in its most classical and general version may be schematized as follows:

RESULTATIVE PROPER → PRESENT PERFECT → PERFECTIVE PAST / SIMPLE PAST
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Figure 1

Anterior path (adopted from Bybee, Perkins & Pagliuca 1994 and Dahl 2000a)

It should be noted that the standard model most commonly refers to grammatical categories and their development: a resultative proper gram develops into a perfect which, in turn, mutates into a perfective and simple past. Thus, the consecutive evolutionary stages correspond to gram types with their different semantic-functional

³ Resultative proper grams are formations whose meaning consists of two equally relevant components: one indicates the currently attested state of an object or person and the other makes reference to an action, formerly accomplished, from which this on going state has resulted. In such expressions, neither the prior dynamic event nor the posterior static result is emphasized – both are indissoluble and interconnected.

⁴ The perfect usually emphasizes the dynamic event or activity while the relevance of the component related to the resulting state – although certainly available – is reduced.

properties. As a result, the cline presents the evolution as if grams developed, “jumping” from one phase to another.⁵

2.2. Shortcomings of the standard model

While the standard model usually comprehends the subsequent evolutionary stages on the anterior cline as representing different grammatical categories, the situation in the real world is quite different. Grammatical formations do not jump from one stage to another – they rather amass senses that correspond to consecutive phases on a given trajectory, in our case, on the anterior path (Andrason 2011). The advancement on the trajectory (i.e. the possibility to convey senses located at the end of the path) does not imply that values acquired previously (i.e. properties that match more original stages of the cline) must be abandoned. On the contrary, they may survive for a long time even though the gram has developed meanings prototypical for highly developed phases of the pathway. Thus, grams do not necessarily mutate from a resultative proper into anterior and then into a past tense. Original resultatives rather acquire additional present perfect senses. Subsequently, they may gain an explicit past value, first perfective and subsequently non-perfective or durative. As a result, it is possible to find verbal formations whose total meaning reflects various stages on the anterior cline. For instance, the *passé composé* in French may be encountered in the function of a resultative proper, present perfect and perfective or simple past (Grevisse 1975), thus spanning the entire anterior path (Andrason 2010b). Similarly, the Akkadian *iḫrus* formation offers the value of a resultative proper (stative), present perfect, perfective past and simple past (Andrason 2010b). Probably, one of the most evident cases is the Biblical Hebrew *qatal*. This formation not only provides meanings that cover the entire anterior cline (resultative proper, present perfect, perfective past and simple past) but also conveys optative-conditional (counterfactual and factual, real and unreal), evidential (evidential proper and inferential) and future values. There is no path in the standard model that could predict such a heterogeneous category.

It must be emphasized that the correspondence of the overall meaning of a gram to a large portion of the path is highly frequent and stems from the fact that verbal grams (as any components of the language) are profoundly, regularly and inherently polysemous, displaying a broad range of uses and values (Evans & Green 2006: 169-170).

3. New model

3.1. New model of the anterior path

Since it is the development of semantic properties (i.e. incorporation of senses) —but not the evolution of realistic grams (i.e. grams do not jump from one stage to

⁵ However, in the category of old anteriors, Bybee, Perkins & Pagliuca (1994) use the path model in order to account for the semantic potential of a gram – it is used a present perfect (the intermediate stage) and —to some extent— as a past tense (a more advanced stage).

another but, on the contrary, may span various portions of the cline)— that follows the order established by the anterior cline, the “traditional” path model should be re-interpreted. Although it fails to represent possible evolutions of realistic grammatical objects (categories such as the French *passé composé*, the Akkadian *iprus* or the Biblical Hebrew *qatal* are not posited by the standard model), the theory may be successfully maintained if we understand it as a codification of a unidirectional incorporation of new values and uses, prototypical to formations that originate in determined types of inputs. This means that paths predict the series of integrated meanings, and thus that stages located on a path make reference to consecutively acquired new senses.

Having said that, let us reinterpret the anterior trajectory as a portrayal of a gradual acquisition of new senses by original resultative constructions. Taking into account data provided by Harris (1982), Bybee, Perkins & Pagliuca (1994: 55-57, 98, 104-105), Squartini & Bertinetto (2000: 406-407, 414-417 and 422), Lindstedt (2000: 379), Heine & Kuteva 2007: 151, and Mitkovska & Bužarovska (2008: 136), it is possible to obtain a more detailed picture of the anterior cline. Resultative inputs first develop present perfect senses, acquiring successively and in the strictly determined order the following anterior⁶ values: inclusive,⁷ resultative,⁸ frequentative,⁹ experiential¹⁰ and indefinite.¹¹ Afterwards they become acceptable in explicit past contexts, giving rise to definite past uses. Once admissible in an overt past environment, the gram usually increases its temporal distance from the enunciator’s here-and-now. More exactly, it develops past functions in a following sequence: immediate, hodiernal, hesternal, recent, general and remote. It shall also be noted that all past tense uses are first generated in discourse from where they spread to narrative. Finally, in certain languages, during the acquisition of the past temporal value, it is possible to establish a stage where an upcoming past tense offers a clear aspectual perfective sense. At a posterior stage, such perfective pasts become admissible in durative or non-perfective contexts.¹² The entire trajectory may be schematized as follows:

⁶ In this article, the terms ‘perfect’ and ‘anterior’ are used as synonyms.

⁷ The inclusive (also labeled universal) anterior indicates that an action or state holds without interruption from a determined point in the past to the present moment, e.g. *I have known Max since 1960* (Jónsson 1992: 129-145).

⁸ The resultative anterior introduces dynamic events, portraying them as highly relevant for the present state of affairs, e.g. *I cannot come to your party – I have caught the flu* (McCawley 1971).

⁹ See, for instance, the Portuguese perfect *Ultimamente o João tem lido muitos romances* ‘Recently John has read many novels’ (Squartini & Bertinetto 2000: 409).

¹⁰ The experiential anterior indicates that the subject has an experience of having performed (or not) a given action. This means that the activity is portrayed as an experience which occurred at least once, and which might have been repeatable, e.g. *I have never read that book* or *I have read ‘Principia Mathematica’ five times* (Jónsson 1992: 129-145).

¹¹ The indefinite perfect (also labeled indefinite past) indicates clearly past events without, however, specifying its temporal location. As for the former property, the gram approximates a past tense. However, given the latter characteristic, the formation behaves as a typical present perfect. Therefore in figure 2 below, it is located between the semantic domains of a present perfect and past tense.

¹² The grouping of such perfective and non-perfective values delivers the category of a simple past tense (cf. Bertinetto & Lenci 2010: 36-38).

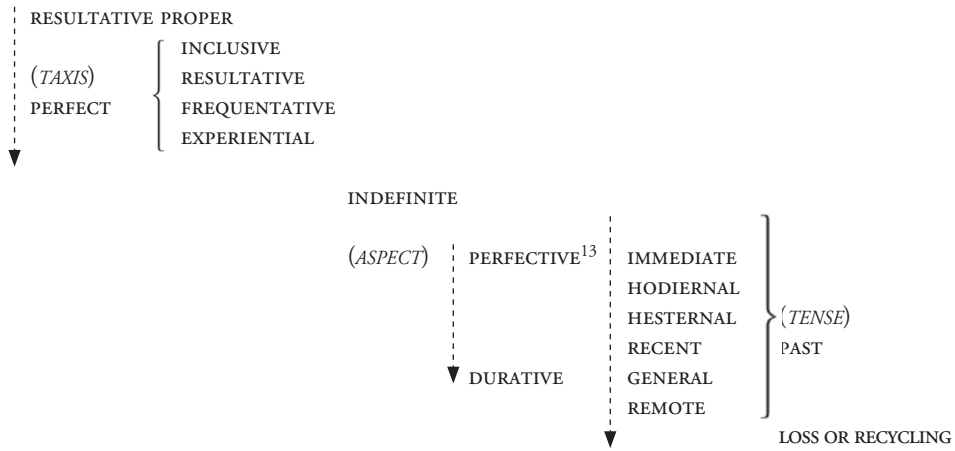


Figure 2

Anterior path as a sequence of incorporation of new senses¹⁴

3.2. Anterior cline as a model for a gram’s polysemy

Since the model determines the order of senses incorporated into the total meaning of an originally resultative construction, the unidirectional chain posited by it may be

¹³ As a definite past, the gram may undergo two, to some extent, independent types of evolution. One consists in increasing the temporal distance from the speaker’s here-and-now: immediate > hodiernal (the same day or one day’s past) hesternal (yesterday’s past) > recent > general (a person life’s past) and remote (historical and ancient) past. The other includes the acquisition of certain aspectual nuances, first perfective ones (perfective past) and next durative or non-perfective ones (the gram functions as a simple past – an aspectually neutral gram). This change is facultative and occurs in determined types of verbal systems. It shall be noted that there is no precise stage-to-stage equivalence between the stages which link the indefinite perfect and various subcategories of the definite past on the one hand, and the development of the perfective past into its aspectually neutral variant, on the other.

¹⁴ The vertical arrows in this figure symbolize the diachronic progression of resultative inputs. Take note that our labels —conceptual boxes that make reference to senses acquired by resultative inputs— are not arbitrary. They meet three conditions. First, our categories respect the terminology commonly used in grammatical descriptions of languages belonging to distinct families (cf. Nurse 2008, Waltke & O’Connor 1990 and Hewson & Bubenik 1994) and in studies dedicated to general linguistics (cf. Bybee, Perkins & Pagliuca 1994 and Haspelmath et al. 2001). Second, in certain languages, the labels, employed in figure 2, correspond to realist and independent categories – they typologically exist. And third, these specific categories sometimes have a practical application. Namely, they enable linguists to establish an exact range of correspondence between constructions whose semantic potential, although similar, is not identical. For example, the category of an inclusive and hodiernal (and, in certain case, hesternal) definite past gives us a possibility to determine the precise difference in meaning between the English and Spanish present perfects (Bybee, Perkins & Pagliuca 1994: 98). In English, the present perfect gram (*I have done*) fails to appear with the sense of a definite hodiernal-hesternal past, while in Spanish a typologically equivalent formation (*he hecho*) does not provide the value of an inclusive perfect. The remaining perfect uses (resultative, experiential, iterative and indefinite) are conveyed both by the English and Spanish form.

employed in order to define the synchronic semantic potential of a concrete and realistic gram that has been developing in accordance with the path. Put differently, given that resultative proper formations incorporate and store taxis, aspectual, temporal values in the sequence established by the anterior cline, the overall meaning of a formation —its entire polysemy— may be equaled with a portion of the trajectory. Each specific sense simply corresponds to a stage on the path – each one of them has been acquired at a given historical moment. This interpretation of the anterior track harmonizes with a principle of cognitive linguistics whereby a synchronic semantic variation is a static vestige of a diachronic change (Lewandowska-Tomaszczyk 2007: 140).

Consequently, resultative grams may be understood at any moment of their development as collections or amalgamations of senses that match evolutionary segments of the anterior path. Thus, the total meaning of a gram —its *state* at a time t — is portrayed as a portion of the cline (cf. Van der Auwera & Gast 2001: 186-188). In this view, the path model represents an “equation” or an abstract law governing the acquisition of new values.

3.3. New model of evolution of grams

As explained above, the anterior path (as any cline) specifies the order of incorporation of new senses but not the extent of their accumulation. Virtually, post-resultative grams at a given moment in their historical development allow any amalgamation of values (portrayed as stages of the trajectory) with the exception that no islands are allowed – the semantic potential corresponds to an uninterrupted section of the cline.¹⁵ More specifically, the type of combination of senses acquired in accordance with the anterior cline is undetermined: it may cover one phase, two phases, a large segment of the cline or, in an extreme case, the entire trajectory.

Furthermore, since the meaning of a realistic gram is typically polysemous and cannot be reduced to one diachronic stage of the path, the evolution of a resultative construction cannot be equaled with the anterior cline because this trajectory, as mentioned above, does not indicate possible states of post-resultative constructions. More specifically, it says nothing about the extent of amalgamation of senses. Consequently, it does not depict realistic evolutionary movements. Strictly speaking, no verbal formation evolves in the manner indicated by the anterior path due to the fact that no gram mutates, jumping from one sense-stage to another.

However, given that the anterior cline may be employed to represent a complex state of a gram, viz. its entire polysemy (a formation is portrayed as a portion of the anterior trajectory, where each sense matches a given diachronic stage during which it has been acquired), it is possible to posit a more accurate model of the evolution of resultative formations built on the anterior cline scheme. This new representation will determine how the state of a construction, i.e. its path-representation, has been evolving during various historical periods. More precisely, we will determine what the form’s polysemy p -portrayed and ordered by means of the anterior track into a

¹⁵ This assumption has its roots in another principle of cognitive linguistics whereby senses must be connected, deriving —both conceptually and diachronically— one from another (cf. relatedness principle in Evans & Green 2006: 331-332, 352-253 and Lewandowska-Tomaszczyk 2007: 140)

sequence $(x_1...x_n)$ where each x symbolizes a given sense that, in turn, corresponds to a diachronic stage on the path – has been at distinct temporal points t . Consequently, the semantic development of a formation will correspond to a sequence of states (for a practical illustration, see section 4 below).¹⁶

Having discussed theoretical aspects of the path model, let us illustrate how this alternative understanding of the anterior path and other clines operates in practice. In the following part of the article, we will show that the new viewpoint of the anterior trajectory can successfully eliminate a supposed example of a contrary development provided by Drinka (1997). In other words, we will demonstrate that the novel perspective enables us to “regularize” the evolution of the IA Aorist and, hence, preserve the universality and unidirectionality of the anterior path.

4. Re-directing a “non-unidirectional” development

4.1. Drinka’s argument

According to Drinka (1997: 125), the development of the Aorist in Sanskrit is a clear counterexample to the principle of unidirectionality. Employing the model posited by Bybee, Perkins & Pagliuca (1994: 105), she understands the representation of the evolution of resultatives as a change from one category into another category. More specifically, Drinka claims that resultatives develop into anteriors (perfects), which, in turn, become perfectives or pasts.¹⁷

With this comprehension of the anterior path, Drinka proceeds to discuss the Indo-Iranian case. She claims that the change of the Sanskrit Aorist from a perfective past into a present perfect (as well as into a recent and experienced past) contravenes the anterior path hypothesis and thus constitutes a counterexample to the unidirectionality principle (ibid.: 122-123). Her argumentation may be summarized as follows. Classical Proto-Indo-European included in its verbal repertory the Aorist defined as a perfective past and the Perfect used as a stative or resultative proper formation. In Vedic (the oldest strata of Sanskrit), the PIE Perfect conserved its original value of expressing present states. In Sanskrit, however, it moved down the cline

¹⁶ At a higher level of analysis, if we compare an extensive amount of such concrete evolutionary cases, and the development of states in concrete languages, it will be possible to posit a true *evolutionary* anterior path. This cline will not describe incorporation of senses (as our anterior cline does) but will provide some rules or generalizations concerning the evolution of real-world grams. Namely, it will show how the amalgamation —the extent of polysemy stored in accordance with the anterior path— develops and thus how the semantic potential of resultatives evolves. This signifies that while the paths (anterior track included) determine the direction and order of consecutively acquired senses during the evolution of a category, this *state* trajectory represents consecutive *sets of accumulated and developed meanings*. We still lack such a global evolutionary view built on a comprehensive empirical study.

¹⁷ Following Bybee, Perkins & Pagliuca (1994), Drinka (1997: 119-120) distinguishes between ‘young’ and ‘old’ anteriors (perfects) and assumes that the former diachronically precede the latter. As explained, young anteriors are gram with an exclusive present perfect sense (prototypical present perfects). Old anteriors, on the contrary, show signs of taking on perfective and past senses – they “moved down the path” (ibid.: 119). Thus in Drinka’s model (exactly as was the case in the standard model), the stages of a resultative, young anterior, perfective and past make reference to verbal categories. However, when describing the category of an old perfect, stages of the cline are employed in order to refer to values, components of the semantic potential of the formation.

and developed the sense of a resultative present perfect. Furthermore, it also was employed to express past—even remote—events and facts. Thus, the inherited PIE Perfect (a stative resultative proper gram) developed into a past tense, confirming the principle of the anterior cline. On the other hand, Drinka (*ibid.*) claims that the Aorist (a descendent from the PIE perfective past) is employed in Vedic in order to denote recent past activities, facts that refer to personal experience or events that have a strong connection to the present state of affairs. Also in Brāhmaṇas (a subsequent stage of this ancient Indo-Aryan language – an intermediate phase between Vedic and Classical/Later Sanskrit; cf. Whitney 2003: xv-xvi), the Aorist played the role of a present perfect in direct discourse. Since “[i]t is the aorist, not the perfect, which is used to refer to personal experience [...and since t]he perfect is used to refer to the ancient, mythical event [and] the aorist [...] to the recent replication of this event on a personal level”, Drinka (1997: 122) concludes that the perfective past became a present perfect. This change of course violates the anterior path principle: past tenses (either perfective or simple) are not supposed to develop into present perfects. In the next section, we will proceed to analyze this “irregular” evolution in more detail, showing the inaccuracy of Drinka’s argument.

4.2. The evolution of the Aorist and “related” grams

In order to give a more comprehensive picture of the entire development, we will analyze not only the semantic potential of the Aorist, but also the polysemy of two other formations, viz. Perfect and Imperfect. As we will see, the growth of these constructions greatly influenced the evolution of the Aorist itself. We will start the analysis by describing the situation in Proto-Indo-European. Next, the modifications of the state: the Perfect, Imperfect and finally, Aorist in three different periods of Sanskrit (in Vedic, Brāhmaṇas and Classical/Late Sanskrit) will be discussed.

The PIE Perfect was a prototypical resultative proper formation. It conveyed stative and resultative-stative senses (Hirt 1928: 278-284, Szemerényi 1990: 317 and Tichy 1998: 81-82) and displayed an exemplary de-transitive nature, still seen in Greek (cf. Chantraine 1986: 197-198 and especially Perel’muter 1998: 277, 280, 287). On the other hand, as again documented by Homeric Greek, it did not function as a dynamic resultative perfect – it rather expressed pure states or states viewed as results of previous actions (cf. Chantraine 1986: 197-199 and Tichy 1998: 81-82). The meaning of the PIE Imperfect is reconstructed as an exemplary imperfective past (progressive, habitual or durative; cf. Tichy 1998: 74). However, the Aorist was not only a perfective past as claimed by Drinka. Since there was no specialized present perfect in the verbal system, the Aorist—a perfective past gram (Tichy 1998: 74, 114-116)—must likewise have expressed the sense corresponding to the semantic domain of present perfects. It probably conveyed values of a resultative, experiential, iterative and indefinite perfect. All of these sense are still available in Latin where the Perfectum (a morphology that in several aspects has its roots in the PIE Aorist; cf. Hewson & Bubenik 1997: 191, 195) may function not only as a narrative perfective or simple past tense, but also as a present perfect (resultative, experiential, iterative or indefinite; see, Hewson & Bubenik 1997: 196 and Zawadzki

2003: 93-94).¹⁸ Consequently, the PIE Aorist covered not one, but several stages on the anterior cline – it spanned from the present resultative perfect to the perfective past.

In Indo-Iranian, as correctly observed by Drinka (1997: 121), the PIE Perfect advanced on the path. In Vedic, the Perfect expresses the condition acquired by the subject. This present state is usually portrayed as resulting from a previous activity (Macdonell 1993: 341). In this usage, conveying resultative-stative and stative (with no resultative nuances available) senses, the gram approximates the category of a resultative proper. However, the formation may also function as a dynamic present perfect. It provides the value of an inclusive or resultative perfect, as well as the sense of an experiential present perfect (Macdonell 1993: 341 and Hewson & Bubenik 1997: 58). Generally speaking, in all of these cases, the Perfect expresses events that, although have occurred previously, remain relevant for a present situation. In certain instances, however, where the idea of current relevance is absent, the gram is employed with the force of an indefinite present perfect. In addition, the Vedic Perfect commonly appears in the recent past function, introducing activities that were completed in an immediate or recent past. On the contrary, only very sporadically, the formation may denote a single action in remote past or in narration (Whitney 2003: 296). In such cases, the gram typically interrupts the narrative story line, introducing a reflection that may commonly be understood as expressing the effect of the action previously related (ibid.: 343). On the whole, the functions of a resultative proper and present perfect clearly predominate. In Brāhmaṇas, the Perfect provided three main values, functioning as a resultative proper, present perfect (in various subtypes) and simple (perfective and non-perfective) narrative past (ibid.: 344-345). This means that the category further advanced on the path. In particular, the distinction of the tense value between the Perfect and the Imperfect (cf. the next paragraph) is almost entirely lost. The difference between the two categories employed in the narrative past function consists in frequency – the Imperfect predominates while the Perfect is only exceptionally used (cf. Whitney 2003: 296). Thus, as was the case in Vedic, the most common use of the Perfect corresponds to the true present perfect sense – the gram indicates a completed event and events located in a proximate past. Finally, in the Classical Sanskrit, the gram functions as a “preterite” or a broad simple past tense (ibid.).¹⁹

Another important category that conditioned the development of the Aorist was the Imperfect. The Imperfect —a reflex of the PIE imperfective past— already in Vedic ceased behaving as an exemplary imperfective past and evolved into a general simple narrative tense, often conveying the idea of continuity. It could introduce both past progressive or habitual activities (i.e. durative or non-perfective) as

¹⁸ A similar present perfect sense of the PIE Aorist is demonstrated by the Germanic Preterite. In Gothic, the Preterite (a gram that is partially derived from the PIE Aorist, cf. Hewson & Bubenik 1997: 212-219) clearly provides two major groups of senses: present anterior (or even past anterior) and simple (both perfective and non-perfective) past (cf. Braune & Ebbinghaus 1971: 106). Similarly, in Old Icelandic, the Preterite besides its most common function of a simple past tense (perfective or durative) may also be employed as a present perfect (inclusive, resultative, experiential, iterative and indefinite) or as a pluperfect (Iversen 1994: 140).

¹⁹ According to Hindu grammarians —although not confirmed by Whitney (2003)—, the Perfect describes facts not witnessed by the narrator.

well as isolated momentary (i.e. perfective) events (Hewson & Bubenik 1997: 61). The Imperfect also may convey the sense of past anteriority, functioning as a pluperfect (ibid.). As noted by Macdonell (1993: 345), the Imperfect is a past tense of narration with no relation to the present. The meaning of the Imperfect has remained unchanged through the entire history of Old Indo-Aryan. Both in Brāhmaṇas and Classical/Late Sanskrit, the gram denotes all types of past events (either perfective or non-perfective) – it is a simple past tense, a preterite (Whitney 2003: 278).

Having explained the development of the Indo-Aryan Perfect and Imperfect, let us describe the factual evolution of the Aorist. In Vedic, the PIE Aorist is used with a clear dynamic present perfect sense, expressing actions that occurred in the past but that at the same time remain relevant for the present situation (Hewson & Bubenik 1997: 59). Acting as a present perfect, the Aorist virtually provides senses corresponding to all its subtypes – it functions as an inclusive, resultative, experiential and iterative present perfect (Macdonell 1993: 345). It should be noted that the gram does not express the resultative proper value (both resultative-stative and stative), which is regularly conveyed by the Perfect (cf. Macdonell 1993: 343 and Hewson & Bubenik 1997: 59). Additionally, the Aorist introduces indefinite (indefinite perfect) and immediate past events. Finally, Whitney (2003: 928-929) affirms that in Vedic hymns, the Aorist may sometimes be used narratively, supposedly with a general or remote past temporal value. In general, the prototypical usage of the Vedic Aorist corresponds to the present perfect, indefinite perfect and immediate (discursive) past tense. In Brāhmaṇas, the Aorist again expresses events that belong to the speaker's experience or that have been witnessed by him or her. As an exemplary perfect of current relevance, it is commonly used in the sense of an inclusive, resultative, experiential and iterative perfect (cf. Macdonell 1993: 345-346). It may also indicate past events, either indefinite or, when appearing with the adverbs *purā* 'formerly', definite and recent. On the contrary, the gram never narrates – it does not introduce central events of a narrative storyline. When the Aorist appears in narration, it expresses results of a ritual (Hewson & Bubenik 1997: 59-60). This lack of the narrative remote past value distinguishes the Aorist from the Perfect and Imperfect (Whitney 2003: 329). As observed by Whitney (2003: 329), in the two older strata of the language —i.e. in Vedic and Brāhmaṇas— the Aorist most commonly has the value of a proper present perfect or discursive recent past. It expresses a previously accomplished action that is relevant for the present. It indicates that something has just occurred, that something has never, once or often occurred, that something has been occurring, and that something has formerly or recently occurred. On the contrary, in the later Sanskrit language, the Aorist is employed as a simple past tense, a preterite. In this function, it is equivalent to the Imperfect and Perfect and introduces any past events and activities: indefinite, recent and discursive, remote and narrative, as well as perfective and non-perfective (ibid.: 328-329).

4.3. Model of the evolution of the Aorist

Already the sole analysis of the semantic potential of the Aorist shows that Drinka's treatment is far too simplistic. Neither may the PIE Aorist be equaled with an invariant perfective past nor is its successor in Vedic and Brāhmaṇas a present per-

fect only. In all the historical periods, the gram displays a broad range of senses – it is polysemous.

In accordance with the new understanding of the path model, let us use the anterior cline as a template of this polysemy i.e. as a conceptual matrix of the semantic potential offered by the Aorist. Since the model posited in figure 2 is far too complex to be employed in order to portray the change of the state of the Aorist from Proto-Indo-European to Classical/Late Sanskrit, we will simplify it. Put differently, in order to render the visual portrayal of the semantic space of the gram neater and the comparison of the states of the formation more straightforward, the following changes will be introduced. First, we shall represent the stage of the resultative proper sense as “1”, all the perfect senses as “2” and the indefinite perfect as “3”.²⁰ Consequently, we will not distinguish between various perfect anterior uses. Furthermore, we will group the values of an immediate-recent past and discursive past as “4” and the sense of a general-remote past and narrative past as “5”. Finally, the stage of perfective meaning will be symbolized as “6” while the phase of the durative or non-perfective past value will be represented as “7”. Thus, the entire anterior cline will receive the following simplified shape:

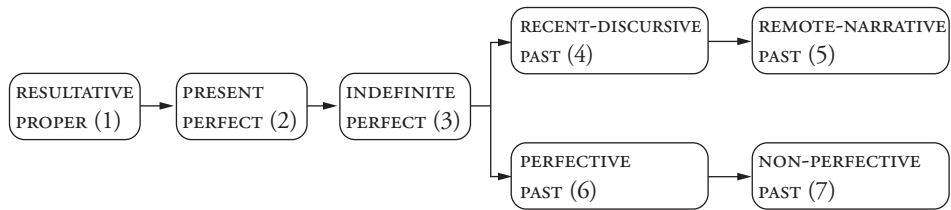


Figure 3

Anterior cline as a simplified matrix of a possible semantic potential

Using this template —based on the anterior cline model— let us represent the development of the semantic potential of the Aorist from Proto-Indo-European to Classical Sanskrit, passing through the stages of Vedic and Brāhmaṇas Sanskrit in accordance with the information provided in section 4.2. In Proto-Indo-European, the Aorist functions as a present perfect (2) indefinite perfect (3), recent (4), remote (5) and perfective (6) past. The only change in older strata of Sanskrit affects the sense of a remote past (5) – in Vedic it becomes infrequent and in Brāhmaṇasis entirely missing. In Classical/Latte Sanskrit, the Aorist “regains” the remote-narrative past value (5) and acquires the meaning of a non-perfective past (7). At the same time, the formation loses the present perfect values (2).

²⁰ The distinction between the indefinite perfect and the remaining present perfect senses is maintained. The values grouped in box “2” (inclusive, resultative, frequentative and experiential) regularly convey the idea of current relevance. This shade of meaning is however missing in the indefinite perfect, which expresses a past event without specifying its exact temporal location.

²¹ In Proto-Indo-European, the narrative past value makes reference to personal or oral narration. Of course, there was no *literary* narrative genre at this time.

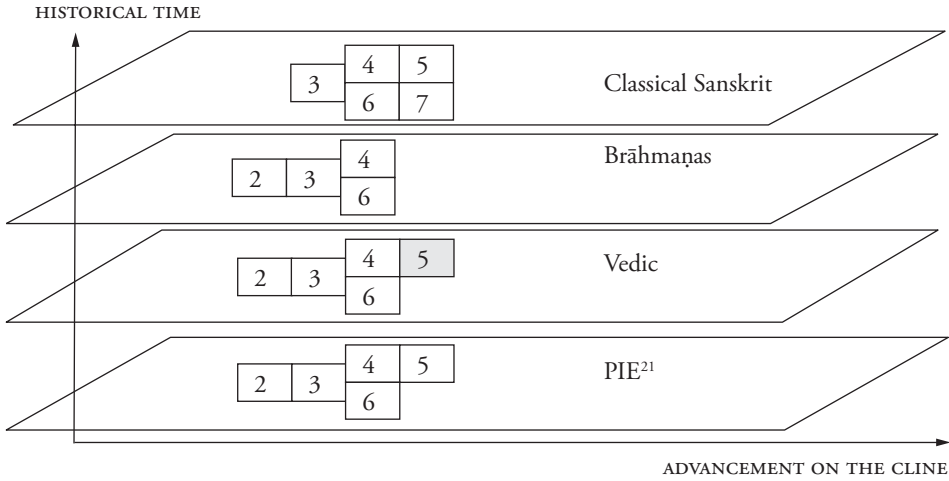


Figure 4

Evolution of the state of the Aorist²²

Figure 4 demonstrates that no irregular movement occurred in the history of the Aorist. The gram never transmuted from a perfective past into a present perfect. What happened is the following: in Indo-Aryan, the sense of a remote-narrative past gradually decreased in frequency,²³ becoming rare in Vedic and entirely lacking in Brāhmaṇas. In Classical/Late Sanskrit, the Aorist became a prototypical simple past tense: it reincorporated the (temporarily lost) remote-narrative past value, acquired the non-perfective past meaning, simultaneously abandoning the sense of a present perfect of current relevance.

This decrease in frequency of the remote-narrative past value —fully tolerable by the anterior cline model in the new version because peripheral senses may be abandoned without any theoretical problem²⁴— stemmed from the growth of the Perfect (it could be used as in narration) and in particular from the development of the Imperfect (already in Vedic it expressed both imperfective and perfective past events and activities). In Classical/Late Sanskrit, the Aorist, Perfect and Imperfect merged into a broad past tense, a preterite (Hewson & Bubenik 1997: 52, 55).²⁵

²² The grey color in box “5” indicates that this sense is highly infrequent and in some cases dubious.

²³ This decrease is of course reconstructed because we do not have any direct data concerning the frequency of senses provided by the Aorist in Proto-Indo-European, itself a reconstructed language. Here, in light of the evidence offered by ancient languages such as Greek, Latin, Gothic or Old Icelandic we assume that in the PIE period, the gram was a regular perfective past – both recent-discursive and remote-narrative.

²⁴ As explained, the only constraint is the formation of so-called ‘semantic islands’.

²⁵ Although the majority of forms derived from the Imperfect, certain Perfect (*uvāca* ‘he said’, Hewson & Bubenik 1997: 58) and a lot of originally Aorist forms were likewise preserved (ibid.: 55).

5. Conclusion

The present paper has demonstrated that the universality and unidirectionality of verbal paths can be maintained if we understand the model of clines as a representation of the acquisition of new senses and, hence, as a matrix of the sematic potential displayed by a gram at a determined historical moment – i.e. as its synchronic state. The evolution of grammatical categories, in turn, should be interpreted as a succession of states which are portrayed as portions of a given trajectory (or a cluster of them).

This alternative interpretation of the path model —where the polysemy is in focus— enabled us to refute an alleged counterexample to the anterior cline movement. By analyzing the state of the Aorist in Proto-Indo-European and in three historical varieties of the Sanskrit languages (Vedic, Brāhmaṇas and Classical/Late Sanskrit), we showed that the gram had undergone an entirely regular development. More specifically, the sequence of acquired senses during the history of the Aorist and thus the total direction of the trajectory it followed stand in perfect harmony with the order and direction established by the anterior path.

Since the traditional paths are now regarded as abstract, generalized and fictionalized imperatives —“equations” that, on the one hand, control the arrangement of subsequently incorporated senses but, on the other, fail to portray real developments (they say nothing about the state space of a gram)—, and given that concrete grammatical evolutions are represented as changes in the state displayed by a given formation in distinct diachronic strata, a new universal model of the realistic evolution of verbal constructions seems necessary. This novel theory would deliver universal and unidirectional properly *evolutionary* clines, i.e. trajectories that would encapsulate generalizations concerning the evolution of states of grams belonging to a similar type. The formulation of such a model, built on an extensive empirical study, where changes in states displayed by various formations need to be compared, will constitute a future research activity of the author.

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